

## US005334761A

# United States Patent [19]

# Gebeyehu et al.

[56]

[11] Patent Number:

5,334,761

[45] Date of Patent:

Aug. 2, 1994

[54] CATIONIC LIPIDS [75] Inventors: Gulilat Gebeyehu, Silver Spring; Joel A. Jessee, Mt. Airey; Valentina C. Ciccarone, Gaithersburg; Pamela Hawley-Nelson, Silver Spring, all of Md.; Anna Chytil, Nashville, Tenn. [73] Assignee: Life Technologies, Inc., Gaithersburg, Md. [21] Appl. No.: 937,508 [22] Filed: Aug. 28, 1992 [51] Int. Cl.<sup>5</sup> ...... C07C 233/36 [52] U.S. Cl. ...... 564/197; 554/105; 554/106; 554/107; 560/222; 560/251; 564/292; 564/504; 206/569 [58] Field of Search ...... 260/404; 560/222, 251; 564/292, 197, 504; 554/105, 106, 107; 206/569

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#### [57] ABSTRACT

The present invention discloses cationic lipids useful for making lipid aggregates for delivery of macromolecules and other compounds into cells. They are especially useful for the DNA-dependent transformation of cells. Also disclosed are lipids useful both for the delivery of macromolecules and also useful as intermediates for making other such lipids.

18 Claims, No Drawings